

## ■ Extending Battery Life

Chances are you have an electronic device that has a rechargeable battery. Most people have several and it can be challenging keeping up with which device gets charged when, with which charger, and for how long. For this newsletter, we'll go over the different types of rechargeable batteries and how you can extend battery life (if possible).

### Types of Rechargeable Batteries

There are several different types of rechargeable batteries on the market right now. The most common are Lithium-ion (Li-ion), Nickel Metal Hydride (Ni-MH), Nickel-Cadmium (Ni-Cd), and Nickel Zinc (Ni-Zn).

### ■ Tip of the Month

Did you know that it's illegal to throw a cell phone in the trash in New York, Maine and California? And that New Jersey has a similar ban on Nickel Cadmium (Ni-cd) and Small Sealed Lead (Pb) batteries?

Recycling is important and easy thanks to increased participation from manufacturers, retailers and county government agencies. You may be surprised as to what you can recycle so take a look at the following site:

**PA Dept of Environmental Protection's** website: <http://www.depweb.state.pa.us/> - Open this page and on the left side navigation, click **Waste**, then click **Recycling**. When the Recycling page appears, on the right side navigation, click **Public Resources** (2nd item from the bottom).

On the Public Resources page, you will find numerous links for recycling options in PA including what to recycle, where to recycle, and additional links for buying recycled products. Also includes fun and educational info for kids.

Electronic devices that use rechargeable batteries include: digital cameras, remote controls (TV, stereo, etc.), toys, mp3 players, and cell phones/ Smartphones. The most popular batteries right now are Li-ion; they don't suffer from memory loss if you recharge them before completely discharging them like Ni-Cd and Ni-MH batteries do. You can safely top off a Li-ion battery even if there's about 50% left. Li-ion batteries typically last between 300-500 cycles which equates to 1-3 years depending on your usage.

Ni-MH and Ni-Cd are older technologies and are more fickle as far as charging goes. Ni-MH batteries begin to lose their charge immediately so are best used in devices that are used regularly such as digital cameras and mp3 players. Storing Ni-MH in cool temperatures will decrease the self-discharge rate prolonging the battery's usage. Ni-Cd batteries should only be charged when at room temperature and they should not be overcharged. Since Cadmium is very toxic, consider purchasing devices that use Ni-MH or Li-ion batteries instead.

For all rechargeable batteries, after a certain number of recharge cycles, you'll notice the battery get weaker and eventually not last as long as when first charged. When that happens, you'll need to buy a new one but don't throw it in the garbage. There are plenty of businesses that will recycle rechargeable batteries; see the WWW below or this month's Tip.

## ■ Websites Worth Watching

1. [www.digitaltips.org/green/corporate-recycling-programs.asp](http://www.digitaltips.org/green/corporate-recycling-programs.asp) - Consumer Electronics Association, lists numerous companies that have incorporated recycling into their business practices.
2. [www.call2recycle.org](http://www.call2recycle.org) - For free, local, drop off locations of rechargeable batteries, visit this site. Popular locations include Lowe's, Home Depot, Best Buy, Radio Shack, Staples, Verizon Wireless, Target & many more.

## How to Preserve Rechargeable Battery Life

### General Device Recommendations

- Update your device's firmware if applicable. Manufacturers frequently improve power management features through software updates.
- Avoid temperature extremes. Excessive heat and cold make batteries wear down faster. Tips: don't leave your electronics in full sun, on your car's dashboard or in the trunk in the summer. Warm the battery up if it's been exposed to cold temps before turning the device on.
- Don't leave your rechargeable battery in the charger for longer than necessary. Extra charging wears down the battery faster.
- Don't let your battery stay depleted for extended periods of time. If you aren't going to use the device for awhile, recharge the battery occasionally to maintain a minimum charge. If you don't, the battery may lose its charging capability.
- Treat batteries gently; hard falls can cause irreparable damage. Make sure the pins and terminals stay clean and dry for the best connection.

**Laptops** - For specific recommendations, consult your device's manual.

- Newer laptops have advanced microprocessors that regulate battery management. Most laptop batteries will stop charging on their own now so it's safe to leave them plugged in while in use. Check your owner's manual to see if your laptop qualifies - most Dell laptops do. If it doesn't mention this, remove the battery when the charge is complete so excess heat doesn't adversely impact the battery.
- Dim the screen and turn off screen savers.
- Unplug external drives (e.g., hard drive, DVD drive, flash drives) if you aren't using them as they will access the laptop's processor occasionally consuming battery power.
- Pay attention to status lights and beeps on your laptop to ensure your battery is working optimally (refer to your laptop's documentation for what the blinking lights and beeping noises indicate).
- Use the Standby and Hibernate Modes to conserve power when you aren't actively working.

### Specific Tips for Smartphone Batteries

Review these tips if you have a Smartphone such as an iPhone or Blackberry. A Smartphone enables you to check email, talk, surf the web, play games, and more all on one device.

- Turn off Wi-Fi or 3G network capabilities if you're not using them. If the signal is weak, your phone's battery will drain quicker searching for a better signal. When you do surf, use Wi-Fi rather than the cellular network. Wi-Fi uses less power than using the 3G or 4G network.
- Turn off any feature you're not using such as Bluetooth or Location Services.
- Dim your screen – the brighter the screen, the more power is consumed. Check to see if your Smartphone has an auto-dimming feature so you don't have to remember to do this manually.
- Check email manually rather than using the "push" technology. If you check your email every 15-30 minutes or longer, you'll save a lot of power.
- Use "airplane mode" which automatically cuts power to a minimum. On a device like the iPhone, airplane mode limits activity to playing music and using it as a personal organizer. In this state, the battery can last up to a week without recharging.
- Flash videos consume a lot of power. Limit viewing Flash videos if your battery is low. You can disable Flash in the Settings section or use apps specifically designed to restrict Flash. *Note: Currently, there is no support for Flash on the iPhone.*
- Speaking of apps, there are several available that can monitor battery life and suggest ways to improve battery usage. For ideas, visit: [www.apple.com](http://www.apple.com) ; [na.blackberry.com](http://na.blackberry.com) (click Software on navigation); or your favorite app store.

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